

SECTION C

This document covers sweet rolls packaged in a polymeric tray for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PCR-S-007, SWEET ROLLS, PACKAGED IN A POLYMERIC TRAY, SHELF STABLE

Styles.

- Style I – Cinnamon Swirl
- Style II – Raspberry Swirl

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of this Performance-based Contract Requirements (PCR) document. The approved sample shall serve as the product standard. Should the contractor at any time plan to, or actually produce the product using different raw material or process methodologies from the approved Product Standard, which result in a product non comparable to the Product Standard, the contractor shall arrange for a new or alternate FA or PDM approval. In any event, all product produced must meet all requirements of this document including Product Standard comparability.

B. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80°F.

C. Appearance.

(1) General. The product shall be fully baked. There shall be no evidence of compression streaks. The product shall be free from foreign materials and shall show no evidence of excessive baking (materially darkened or scorched).

a. Cinnamon swirl. The cinnamon swirls shall be intact and have a light to golden brown crust with an off-white crumb spiraled around a brown cinnamon filling. There shall be 18 intact cinnamon swirls per polymeric tray.

b. Raspberry swirl. The raspberry swirls shall be intact and have a light to golden brown pastry with an off-white to light yellow crumb spiraled around a red raspberry filling. The red raspberry filling can be with or without seeds. There shall be 18 intact raspberry swirls per polymeric tray.

(2) Icing. The icing mixture shall be white.

D. Odor and flavor.

(1) General. The packaged food shall be free from foreign odors and flavors.

a. Cinnamon swirl. The cinnamon swirls shall have a distinct sweet cinnamon odor and flavor.

b. Raspberry swirl. The raspberry swirls shall have a sweet, moderate raspberry odor and flavor.

(2) Icing. The icing mixture shall have a sweet odor and flavor.

E. Texture.

(1) Cinnamon swirl. The cinnamon swirls shall be a tender, moist, chewy roll.

(2) Raspberry swirl. The raspberry swirls shall be a tender, moist, chewy roll.

(3) Icing. Icing shall be moist and sticky. Icing shall be easily spreadable and have a smooth texture. The icing is packaged separately and shall be spread evenly on the top surface of the sweet rolls at serving time.

F. Net weight.

(1) Cinnamon swirl. No individual polymeric tray shall have a net weight of less than 36 ounces.

(2) Raspberry swirl. No individual polymeric tray shall have a net weight of less than 36 ounces.

(3) Icing. The individual net weight of icing shall be not less than 6.0 ounces.

G. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

H. Analytical Requirements.

(1) Water Activity. The water activity (A_w) for the sweet rolls (without icing) shall be not greater than 0.890.

(2) Oxygen content. The oxygen content of the filled and sealed polymeric tray shall not exceed 0.3 percent after 72 hours.

C-3 MISCELLANEOUS INFORMATION

THE FOLLOWING IS INFORMATION ONLY TO PROVIDE THE BENEFIT OF PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY REQUIREMENT.

A. Ingredients. Ingredients may be as follows:

(1) Cinnamon swirls. Enriched bleached flour (bleached flour, malted barley flour, niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), water, partially hydrogenated soybean and cottonseed oils, glycerol, brown sugar, may contain 2 percent or less of the following: high fructose corn syrup, yeast, soybean oil, salt, xanthan gum, spice, hydrated monoglycerides, polysorbate 60, calcium sulfate, ammonium sulfate, gum arabic, sodium stearoyl lactylate, soy flour, artificial flavor, sorbic acid and calcium propionate (preservatives).

(2) Raspberry swirls. Enriched bleached flour (bleached flour, malted barley flour, niacin, reduced iron, thiamine mononitrate, riboflavin and folic acid), water, partially hydrogenated soybean and cottonseed oils, raspberry filling (corn syrup, sugar, apple powder (preserved with sodium sulfite), raspberries, water, food starch-modified, glycerin, citric acid, pectin, gellan gum, sodium benzoate, natural and artificial flavor, red 40), glycerol, sugar, may contain 2 percent or less of the following: salt, hydrated monoglycerides, polysorbate 60, sodium stearoyl lactylate, xanthan gum, gum arabic, calcium sulfate, sorbic acid (preservative) ammonium sulfate, soy flour, yeast, soybean oil, artificial flavor, wheat starch, maltodextrin.

(3) Icing. Sugar, water, maltodextrin, partially hydrogenated soybean and cottonseed oil, liquid soybean oil, cream, nonfat milk, dextrose, salt, natural and artificial flavors, citric acid, potassium sorbate and sodium benzoate (preservatives), titanium dioxide (color), corn oil, agar, guar gum, lecithin, monoglycerides.

SECTION D

D-1 PACKAGING

A. Preservation. Product as specified plus the appropriate number of oxygen scavengers and ovenable tray insert, if applicable, shall be filled and sealed into polymeric trays and the trays shall conform to the requirements of section 3 of MIL-PRF-32004, Packaging of Food in Polymeric Trays, Type II Oven-baked Products. Verification testing and inspection of trays and lids shall be in accordance with Section 4 of MIL-PRF-32004 and the Quality Assurance Provisions of Section E of this Performance-based Contract Requirements document. The requirement for protective sleeves shall not apply to Type II Oven-baked Products.

B. Polymeric tray closure. The filled and sealed tray shall be securely closed.

C. Component. One pouch containing white icing shall be provided for each polymeric tray of product. The following materials and processing requirements are for white icing in a pouch prior to packaging with the product:

(1) Icing pouch.

a. Material and construction. The preformed pouch shall be fabricated from material suitably formulated for food packaging and shall be in compliance with all applicable FDA and USDA regulations. The material shall show no evidence of delamination, degradation, or foreign odor when heat-sealed or fabricated into pouches. The material shall not impart an odor or flavor to the product after filling and sealing. The pouch shall be made by heat sealing three edges with 3/8 inch (-1/8 inch, +3/16 inch) wide seals. The heat seals shall be made in a manner that will assure hermetic seals. The side and bottom seals shall have an average seal strength of not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,B.,(3),a. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the manufacturer's seals to less than 1/16 inch when tested as specified in E-6,B.,(3),c. A tear notch shall be present in one or both side seals to facilitate opening.

b. Filling and sealing. Six ounces (6.0) of white icing shall be filled into the pouch and the filled pouch shall be heat sealed. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective closure seal width to less than 1/16 inch. Seals shall be free of impression or design on the seal surface that would conceal or impair visual detection of seal defects. The average seal strength shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width when tested as specified in E-6,B.,(3),b. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the

effective closure seal width to less than 1/16 inch when tested as specified in E-6,B.,(3),c. Residual headspace in the filled and sealed pouch shall be minimized to facilitate packing.

c. Pouch size. The filled and sealed pouch shall be a size that fits within the void created between the tray lid material and fiberboard pad added during packing.

D. Oxygen scavenger packet. The oxygen scavenger (absorber) shall be constructed of materials that are safe for direct or indirect food contact and shall be suitable for use with edible products. The oxygen scavenger (absorber) shall be in compliance with all applicable FDA and USDA regulations.

E. Ovenable tray insert. The ovenable tray insert (if utilized) shall be constructed of materials that are safe for direct or indirect food contact and shall be suitable for use with edible products. The ovenable tray insert shall be in compliance with all applicable FDA and USDA regulations.

D-2 LABELING

A. Polymeric tray body. The polymeric tray body shall be clearly printed or stamped, in a manner that does not damage the tray, with permanent ink of any contrasting color, which is free of carcinogenic elements. One end of the polymeric tray (see figure 1 of MIL-PRF-32004) shall be marked with the product name and number of portions. If the tray body end markings are not readily legible in low light conditions, a small, easily legible label shall be applied, but not over any existing tray markings. All other markings may be applied along the tray body side. The product name, lot number and filling equipment number shall be applied at the time of tray sealing. 1/

Tray body markings shall include:

(1) Product name. Commonly used abbreviations may be used when authorized by the inspection agency.

(2) Tray code includes: 2/
Lot Number

1/ As an alternate method, tray body markings may be clearly printed or stamped onto the polymeric tray lid at the time of tray sealing, in a manner that does not damage the lid, with permanent ink of any contrasting color, which is free of carcinogenic elements, provided that the required markings are applied onto the tray body prior to packing for shipment to ration assembler.

2/ The lot number shall be expressed as a four digit Julian code. The first digit shall indicate the year of production and the next three digits shall indicate the day of the year (Example, 27 February 2004 would be coded as 4058). The Julian code shall represent the day the product was packaged into the tray and the tray sealed. Sublotting (when used) shall be represented by an alpha character immediately following the four digit Julian code. Following the four digit Julian code and the alpha character (when used), the other required code information shall be printed in the sequence as listed above.

B. Polymeric tray lid. The lid shall be clearly printed or stamped, in a manner that does not cause damage. Permanent ink of any contrasting color, which is free of carcinogenic elements, shall be used. As an alternate labeling method, a pre-printed self-adhering 0.002 inch thick clear polyester label printed with indelible contrasting color ink may be used.

(1) Lid labeling shall include:

- Product name and style
- Ingredients
- Net weight
- Name and address of manufacturer

(2) Lid labeling shall also show the following statements:

TO HEAT IN WATER: Submerge unopened tray in water. Bring water to a boil. Simmer gently 5 minutes. Avoid overheating (tray shows evidence of bulging).

WARNING: Do not heat tray in oven.

TO TRANSPORT AFTER HEATING: Stack trays with lids oriented upright and fiberboard pads in between.

CAUTION: Use care when opening as pressure may have been generated within the tray.

TO OPEN: Using a clean knife, cut the lidding around the inside perimeter of the tray seals.

SUGGESTION: Cut lid along 3 sides and fold over uncut portion. Fold back to keep unused portions protected.

For Cinnamon swirls -

YIELD: Serves 18 portions of 1 cinnamon swirl each.

WHITE ICING: White icing is packaged in a separate pouch. Knead icing

packet. Spread icing evenly on the cinnamon swirls surface using a spatula or knife, prior to cutting the cinnamon swirls.

For Raspberry swirls -

YIELD: Serves 18 portions of 1 raspberry swirl each.

WHITE ICING: White icing is packaged in a separate pouch. Knead icing packet. Spread icing evenly on the raspberry swirl surface using a spatula or knife, prior to cutting the raspberry swirls.

C. Icing pouch. Each pouch shall be clearly printed or stamped, in a manner that does not damage the pouch. Permanent black ink or other contrasting color which is free of carcinogenic elements shall be used. The information may be located anywhere on the pouch (in one complete print).

(1) Icing labeling shall include:

Product name

Ingredients

Date 1/


Net weight

Name and address of manufacturer

1/ Each pouch shall have the date of pack noted by using a four digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 27 February 2004 would be coded as 4058. The Julian day code shall represent the day the product was packaged into the pouch.

(2) Pouch labeling shall also show the following statements:

Knead pouch to soften white icing.

 Apply icing in accordance with tray label instructions.

**CAREFULLY PEEL ICING POUCH AWAY FROM TRAY LID PRIOR
TO SERVING**

D-3 PACKING

A. Packing for shipment to ration assembler. One filled and sealed icing pouch shall be provided for each polymeric tray of specified product. The filled and sealed icing pouch shall be placed between the polymeric tray lid and fiberboard pad and secured to the tray lid using a food grade, peelable adhesive or alternate method of attachment. Four filled, sealed and

processed polymeric trays shall be packed in a snug fitting fiberboard box conforming to style RSC-L, type CF, grade 275 of ASTM D5118/D5118M-95 (2001) Standard Practice for Fabrication of Fiberboard Shipping Boxes. The trays shall be stacked with lids oriented upright. Fiberboard pads shall be placed between the trays and on the top and bottom of the stacked trays. The pad dimensions shall be not less than 1/8 inch of the full length and width inside dimensions of the box and shall be fabricated of class domestic, grade 275 fiberboard. The box shall be closed in accordance with ASTM D1974-98 Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-4 UNITIZATION

A. Unit loads. Unit loads shall be as specified in DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Marking of shipping containers and unit loads shall be as specified in DSCP FORM 3556, Marking Instructions for Boxes, Sacks and Unit Loads of Perishable and Semiperishable Subsistence.

D-6 MISCELLANEOUS INFORMATION

THE FOLLOWING IS FOR INFORMATION ONLY TO PROVIDE PAST GOVERNMENT EXPERIENCE. THIS IS NOT A MANDATORY REQUIREMENT.

A. Icing pouch material. It has been found that a pouch with minimum inside dimensions of 8-3/4 inches in length by 6-5/8 inches in width and fabricated from a 3-ply laminate constructed of, from inside to outside, 0.002 inch thick linear low density polyethylene, extrusion coated or laminated to 0.00035 inch thick aluminum foil, and extrusion coated or laminated to 0.0006 inch thick biaxially oriented nylon, meets the performance requirements of this document.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, single sampling plans indicated in ANSI/ASQC Z1.4-1993 will be utilized. When required, the manufacturer shall provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Research, Development and Engineering Command
Natick Soldier Center
AMSRD-NSC-CF-F
15 Kansas Street
Natick, MA 01760-5018

One lot of each item produced shall be randomly selected during each calendar month of production. Two (2) sample units shall be randomly selected from that one production lot. The two (2) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

(2) Conformance inspection. Conformance inspection shall include the examinations and the methods of inspection cited in this section.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements specified in Section C of this Performance-based Contract Requirements document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in polymeric trays. The sample unit shall be the contents of one polymeric tray and one icing pouch. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects. Defects and defect classifications are listed in table I below. The filled and sealed polymeric trays and icing pouches shall be brought to room temperature (65°F to 75°F).

TABLE I. Product defects 1/ 2/

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>General</u>
101		Product not style, as specified.
102		Evidence of excessive baking (materially darkened or scorched).
103		Polymeric tray does not contain intact oxygen scavenger packet(s).
	201	Evidence of delamination by ovenable tray insert (if utilized).
	202	Icing pouch missing.
104		Icing pouch leaking.
	203	Icing pouch not adhered to tray lid.
TABLE I. <u>Product defects 1/ 2/ cont'd</u>		
Category		Defect
<u>Major</u>	<u>Minor</u>	
	204	Icing pouch does not peel away easily from tray lid.
105		Product not fully baked (gummy center or soggy areas or raw portions).
106		Crushed product.

- 205 Broken or crumbled product. 3/ 4/
- 107 Less than 18 sweet rolls in a tray.
- 206 Not an intact sweet roll.
- Appearance
- 207 Exterior color of the cinnamon swirl(s) not light to golden brown crust spiraled around a brown cinnamon filling.
- 208 Interior crumb of the cinnamon swirl(s) not off-white color.
- 209 Cinnamon swirl(s) not spiral shape roll.
- 210 Exterior color of the raspberry swirl(s) not light to golden brown pastry spiraled around a red raspberry filling.
- 211 Interior crumb of the raspberry swirl(s) not off-white to light yellow color.
- 212 Raspberry swirl(s) does not have red raspberry filling, with or without seeds.
- 213 Raspberry swirl(s) not spiral shape roll.
- 214 Icing not white color.

TABLE I. Product defects 1/ 2/ cont'd

Category		Defect
<u>Major</u>	<u>Minor</u>	
		<u>Odor and flavor</u>
108		Cinnamon swirl(s) not a distinct sweet cinnamon odor or flavor.

109 Raspberry swirl(s) not a sweet moderate raspberry odor or flavor.

215 Icing not a sweet odor or flavor.

Texture

216 Cinnamon swirl(s) not tender, not moist, or not chewy roll.

217 Raspberry swirl(s) not tender, not moist, or not chewy roll.

218 Icing not moist or not sticky.

219 Icing not smooth or not easily spreadable.

Weight

220 Net weight of an individual polymeric tray less than 36 ounces.

221 Net weight of icing pouch less than 6.0 ounces

1/ Presence of any foreign materials such as, but not limited to, dirt, insect parts, hair, wood, glass, metal or mold, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ More than thirty (30) grams of sweet roll crumbs, i.e., not discernible pieces, per polymeric tray.

4/ More than half the sweet rolls broken into three or more pieces.

B. Methods of Inspection

(1) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage at 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(2) Net weight.

a. Sweet rolls. The net weight of the filled and sealed polymeric tray shall be determined by weighing each sample unit on a suitable scale tared with a representative empty tray, ovenable tray insert (if applicable), appropriate number of oxygen scavengers, and lid. Results shall be reported to the nearest 1 ounce.

b. Icing. The net weight of the filled and sealed icing pouch shall be determined by weighing each sample unit on a suitable scale tared with a representative empty pouch. Results shall be reported to the nearest 0.1 ounce.

(3) Water activity. Eight filled and sealed polymeric trays shall be selected at random from the lot regardless of lot size. Water activity (A_w) shall be determined not less than 4 days but not more than 14 days after baking to allow moisture equilibration in the product. The product shall be individually tested for water activity in accordance with the Official Methods of Analysis of the AOAC method 978.18, using an electric hygrometer system self-temperature controlled at 25°C or an equivalent instrument. The sample unit shall be a specimen from the center of the product. The results of each A_w determination shall be reported to the nearest 0.001. Any nonconforming result shall be cause for rejection of the lot. The samples to be tested shall not include the white icing.

(4) Oxygen content testing. Eight filled and sealed polymeric trays shall be randomly selected from one production lot and individually tested for oxygen content in accordance with any USDA approved test method. Testing shall be accomplished after the filled and sealed polymeric trays have been allowed to equilibrate at room temperature for not less than 72 hours from the time of sealing. Test results shall be reported to the nearest 0.01 percent. Verification will be conducted through actual testing by a Government laboratory. Any individual result not conforming to the oxygen content requirement shall be cause for rejection of the lot.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS, POLYMERIC TRAY)

A. Packaging and labeling.

(1) Polymeric tray testing. For purposes of clarification, the polymeric tray without the lid will be referred to as the “tray” and the polymeric tray with the lid shall be referred to as the “container”. The container and container material shall be examined for the characteristics listed in table I of MIL-PRF-32004, Packaging of Food in Polymeric Trays. The lot size, sample unit, and inspection level criteria are provided in table II below for each of the test characteristics. Any test failure shall be classified as a major defect and shall be

cause for rejection of the lot. For rough handling survivability at frozen temperature, polymeric tray survival rate shall be at least 85 percent.

TABLE II. Polymeric tray quality assurance criteria

<u>Prior to processing</u>			
Characteristic	Lot size expressed in	Sample unit	Inspection level
Tray configurations and dimensions	Trays	1 tray	S-1
Oxygen gas transmission rate of tray	Trays	1 tray	S-1
Oxygen gas transmission rate of lid	Yards	1/2 yard	S-1
Water vapor transmission rate of tray	Trays	1 tray	S-1
Water vapor transmission rate of lid	Yards	1/2 yard	S-1
Camouflage	Containers	1 container	S-1

<u>After processing</u>			
Characteristic	Lot size expressed in	Sample unit	Inspection level
Processing	Trays	1 tray	S-2
Rough handling survivability	Test containers	1 container	S-2
Headspace (vacuum)	Containers	1 container	S-1
Closure seal	Containers	1 container	S-1
Internal pressure	Containers	1 container	S-1

Lid opening	Containers	1 container	S-1
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(2) Examination of container. The container shall be examined for the defects listed in table II of MIL-PRF-32004 and the labeling defects listed in table III below. The lot size shall be expressed in containers. The sample unit shall be one processed and labeled container. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major A defects, 2.5 for major B defects and 4.0 for minor defects. Fifty sample units shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot.

TABLE III. Container labeling defects

Category	Defect
<u>Major A</u>	<u>Minor</u>
101	Polymeric tray lid or body labeling missing, incorrect or illegible.
201	When a pre-printed self adhering label is used, the label not adhering to tray lid (for example, label raised or peeled back from edge to corner) or presence of any areas of gaps along the perimeter of the label where the label is not properly adhered.

(3) Label adhesive examination. When self-adhering labels are used, the adhesive shall be tested in accordance with ASTM D3330/D3330M-00 Standard Test Method for Peel Adhesion of Pressure Sensitive Tape. In lieu of testing, a certificate of conformance (COC) shall be provided.

B. Component. Inspection for icing pouch shall be as follows:

(1) Unfilled preformed icing pouch certification. A certificate of conformance may be accepted as evidence that unfilled pouches conform to the requirements specified in D-1,C.,(1),a. When deemed necessary by the USDA, testing of the unfilled preformed pouches for internal pressure resistance shall be as specified in E-6,B.,(3),c.

(2) Filled and sealed icing pouch examination. The filled and sealed pouches shall be examined for the defects listed in table IV. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 6.5 for minor defects.

TABLE IV. Filled and sealed icing pouch defects 1/

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Tear, hole, or open seal.
102		Seal width less than 1/16 inch. <u>2/</u>
103		Presence of delamination. <u>3/</u>
104		Unclean pouch. 4/
105		Pouch has foreign odor.
106		Any impression or design on the heat seal surfaces which conceals or impairs visual detection of seal defects. <u>5/</u>
	201	Label smudges, is missing, incorrect, or illegible.
	202	Tear notch missing or does not facilitate opening.
	203	Seal width less than 1/8 inch but greater than 1/16 inch.
	204	Presence of delamination. <u>3/</u>

1/ Any evidence of rodent or insect infestation shall be cause for rejection of the lot.

2/ The effective closure seal is defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, from side seal to side seal that produces a hermetically sealed pouch.

3/ Delamination defect classification:

Major - Delamination of the outer ply in the pouch seal area that can be propagated to expose aluminum foil at the food product edge of the pouch after manual flexing of the delaminated area. To flex, the delaminated area shall be held between the thumb and forefinger of each hand with both thumbs and forefingers touching each other. The delaminated area shall then be rapidly flexed 10 times by rotating both hands in alternating clockwise-counterclockwise directions. Care shall be exercised when flexing delaminated areas near the tear notches to avoid tearing the pouch material. After flexing, the separated outer ply shall be grasped between thumb and forefinger and gently lifted toward the food

product edge of the seal or if the separated area is too small to be held between thumb and forefinger, a number two stylus shall be inserted into the delaminated area and a gentle lifting force applied against the outer ply. If separation of the outer ply can be made to extend to the product edge of the seal with no discernible resistance to the gentle lifting, the delamination shall be classified as a major defect. Additionally, spot delamination of the outer ply in the body of the pouch that is able to be propagated beyond its initial borders is also a major defect. To determine if the laminated area is a defect, use the following procedure: Mark the outside edges of the delaminated area using a bold permanent marking pen. Open the pouch and remove the contents. Cut the pouch transversely not closer than 1/4 inch ($\pm 1/16$ inch) from the delaminated area. The pouch shall be flexed in the area in question using the procedure described above. Any propagation of the delaminated area, as evidenced by the delaminated area exceeding the limits of the outlined borders, shall be classified as a major defect.

Minor - Minor delamination of the outer ply in the pouch seal area is acceptable and shall not be classified as a minor defect unless it extends to within 1/16 inch of the food product edge of the seal. All other minor outer ply delamination in the pouch seal area or isolated spots of delamination in the body of the pouch that do not propagate when flexed as described above shall be classified as minor defects.

4/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause pouch damage (for example, glass, metal filings) or generally detracts from the clean appearance of the pouch. The following examples shall not be classified as defects for unclean:

a. Foreign matter which presents no health hazard or potential pouch damage and which can be readily removed by gently shaking the package or by gently brushing the pouch with a clean dry cloth.

b. Dried product which affects less than 1/8 of the total surface area of one pouch face (localized and aggregate).

c. Water spots.

5/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the closure seal surface that could conceal or impair visual detection of seal defects, samples shall be furnished to the contracting officer for a determination as to acceptability.

(3) Seal testing. The icing pouch seals shall be tested for seal strength as required in a., b., or c., as applicable.

a. Unfilled preformed icing pouch seal testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F 88-00 Standard Test Method For Seal Strength of Flexible Barrier Materials. The lot shall be expressed in pouches. The sample size shall be the number of pouches indicated by inspection level S-1. Three adjacent specimens shall be cut from each of the three sealed sides of each pouch in the sample. The average seal strength of any side shall be calculated by averaging the three specimens cut from that side. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be cause for rejection of the lot.

b. Icing pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance ASTM F 88-00. The lot size shall be expressed in pouches. The sample size shall be the number of pouches indicated by inspection level S-1. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. The average seal strength shall be calculated by averaging the three specimens cut from the closure. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be cause for rejection of the lot.

c. Internal pressure test. The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. The sample size shall be the number of pouches indicated by inspection level S-1. If a three seal tester (one that pressurizes the pouch through an open end) is used, the closure seal shall be cut off for testing the side and bottom seals of the pouch. For testing the closure seal, the bottom seal shall be cut off. The pouches shall be emptied prior to testing. If a four-seal tester (designed to pressurize filled pouches by use of a hypodermic needle through the pouch wall) is used, all four seals can be tested simultaneously. The distance between rigid restraining plates on the four-seal tester shall be equal to the thickness of the product (+1/16 inch). Pressure shall be applied at the approximate uniform rate of 1 pound per square inch gage (psig) per second until 14 psig pressure is reached. The 14 psig pressure shall be held constant for 30 seconds and then released. The pouches shall then be examined for separation or yield of the heat seals. Any rupture of the pouch or evidence of seal separation greater than 1/16 inch in the pouch manufacturer's seal shall be considered a test failure. Any seal separation that reduces the effective closure seal width to less than 1/16 inch (see table IV, footnote 2/) shall be considered a test failure and shall be cause for rejection of the lot.

C. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table V below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully

packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE V. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. <u>1/</u>
	201	Arrangement or number of polymeric trays not as specified.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

D. Unitization.

(1) Unit load examination. The unit load shall be examined in accordance with the requirements of DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Any nonconformance shall be classified as a major defect.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

DSCP FORM 3507 Loads, Unit: Preparation of Semiperishable Subsistence Items

DSCP FORM 3556 Marking Instructions for Boxes, Sacks and
Unit Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

MIL-PRF-32004 Packaging of Food in Polymeric Trays

GOVERNMENT PUBLICATIONS

Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder
(21 CFR Parts 1-199) and (9 CFR Parts 1-391)

NON-GOVERNMENTAL STANDARDS

ANSI/ASQCZ1.4-1993 Sampling Procedures and Tables for Inspection by Attributes

D1974-98	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D3330/D3330M-00	Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape
D5118/D5118M-95 (2001)	Standard Practice for Fabrication of Fiberboard Shipping Boxes
F 88-00	Standard Test Method for Seal Strength of Flexible Barrier Materials

5 October 2004

1. Date received: 5 October 2004
Date due: 5 October 2004
Date replied: 5 October 2004

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slightly to properly reflect the level of vacuum achieved during normal production for Type I, II and III oven-baked products. The NSC concurs with the need to clarify the vacuum language so as not to compromise the quality and acceptability of the end item oven-baked products through the forced inclusion of a manual vacuum process. However, rather than a change to MIL-PRF-32004B, which would affect all oven-baked products, NSC recommends a change to the affected product document (PCR-C-024) only, as follows:

Section E-6, A(1), Table II: Change "Headspace (vacuum)" to "Headspace (vacuum)
1/"

Add "1/ Lack of visible gap between straight edge and lidding material along entire length of lidding and/or lack of tautness by the lidding shall not be scored as defects."

3. The subject ES Case also requests to change the icing pouch labeling instructions slightly for PCR-S-007 (Swirls) and PCR-S-003 (Scones) to allow for the same labeling to be used for all pouches, thereby eliminating the need for the contractor to procure separate labels and/or separate pre-labeled icing pouches for scones and swirls. Customer utility will not be compromised as language for applying the icing to each specific product will still be present on the tray product label. The language on the icing pouches currently duplicates that on the tray product label. The NSC concurs with the request to change the icing pouch labeling to allow the contractor procurement of a single label and/or labeled icing pouch. As such, NSC recommends changing the affected product documents as follows:

PCR-S-007, Section D-2.C(2): Delete "Squeeze icing onto surface of sweet rolls and spread evenly using a spatula or knife." and substitute with "Apply icing in accordance with tray label instructions."

AMSRD-NSC-CF-F (A. Richards/5037) 5 October 2004
SUBJECT: Reply to ES05-001, Request for Change, MIL-PRF-32004B Packaging of Food in Polymeric Trays.

PCR-S-003, Section D-2.C(2): Delete "Drizzle icing over warm scones." and substitute with "Apply icing in accordance with tray label instructions."

4. The requests that inspection be performed on receipt lots of the icing pouches instead of each individual production lot is nonconcurrent with. The icing pouches are a critical part of the end item and must be inspected as such.

5. The POC for this action is Bob Trottier, X5053 or Allen Richards, X5037.

DONALD A. HAMLIN
Team Leader
DoD Food Engineering Services Team

3 Attachments

(ARichards)

CF: NSC:
Canniff, M
Friel, M
Hamlin, D
Harrington, S
Richards, A
Swantak, W
Trottier, R
Valvano, R
Sheldon, R

CF: DSCP & SVCs:
Tucker, S
Byrd, R
Dyduck, L
Ervin, C
Gordon, T
Haldeman, E
Henry, C
Kasa, T
Malason, M
Miller, G
Paster, D
Salerno, L
Spencer, B
Streibich, H